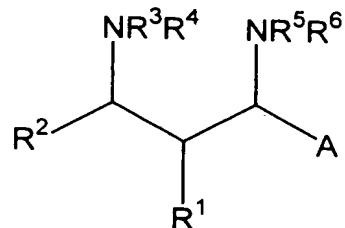


Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) A compound corresponding to formula (I)



or a pharmaceutically acceptable salt thereof,

wherein

R¹ is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, and aryl,

R² is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, and -(C₁₋₆-alkyl)-heterocyclyl,

where R¹ and R² are not at the same time aryl or aryl and heterocyclyl,

or

R¹ and R² together are -(CH₂)_m- and form a ring in combination with the carbons to which R¹ and R² are connected in formula (I),

where $m = 2, 3, 4, 5$ or 6 , wherein the $-(CH_2)_m-$ ring is optionally substituted one or more times by C_{1-6} -alkyl, aryl, $O-C_{1-6}$ -alkyl, $O-(C_{1-6}$ -alkyl)-aryl, or benzo-fused;

R^3 is selected from the group consisting of H, C_{1-12} -alkyl, C_{3-8} -cycloalkyl, aryl, $-(C_{1-6}$ -alkyl)- C_{3-8} -cycloalkyl, $-(C_{1-6}$ -alkyl)-aryl, heterocyclyl, $-(C_{1-6}$ -alkyl)- heterocyclyl, and $C(=O)\cdot R^7$,

R^4 is selected from the group consisting of H, C_{1-12} -alkyl, C_{3-8} -cycloalkyl, aryl, $-(C_{1-6}$ -alkyl)- C_{3-8} -cycloalkyl, $-(C_{1-6}$ -alkyl)-aryl, heterocyclyl, and $-(C_{1-6}$ -alkyl)-heterocyclyl,

or

R^3 and R^4 together are $-(CH_2)_n-$ or $-(CH_2)_2\cdot X\cdot (CH_2)_2-$ and form a ring in combination with the nitrogen to which R^3 and R^4 are connected in formula (I), where $n = 3, 4, 5, 6$ or 7 , where $X = O, S$ or NR^8 , and wherein $-(CH_2)_n-$ or $-(CH_2)_2\cdot X\cdot (CH_2)_2-$ is unsubstituted or substituted by C_{1-6} -alkyl;

R^5 and R^6 are independently selected from the group consisting of C_{1-12} -alkyl, C_{3-8} -cycloalkyl, aryl, $-(C_{1-6}$ -alkyl)- C_{3-8} -cycloalkyl, and $(C_{1-6}$ -alkyl)-aryl,

or

R^5 and R^6 together are $-(CH_2)_o-$ or $-(CH_2)_2\cdot Y\cdot (CH_2)_2-$ and form a ring in combination with the nitrogen to which R^5 and R^6 are connected in formula (I), where $o = 3, 4, 5, 6$ or 7 , where $Y = O, S$ or NR^9 , and wherein $-(CH_2)_o-$ or $-(CH_2)_2\cdot Y\cdot (CH_2)_2-$ is unsubstituted or substituted by C_{1-6} -alkyl; and

A is selected from the group consisting of aryl, heteroaryl, C(=O)OR¹⁰, and 2-propyl;

wherein

R⁷ is selected from the group consisting of C₁₋₆-alkyl, C₃₋₈-cycloalkyl, aryl, heterocyclyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-aryl, and -(C₁₋₆-alkyl)-heterocyclyl;

R⁸ and R⁹ are independently selected from the group consisting of H, C₁₋₆-alkyl, C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-aryl, and heterocyclyl; and

R¹⁰ is selected from the group consisting of C₁₋₆-alkyl, C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, and -(C₁₋₆-alkyl)-aryl;

wherein the compound corresponding to formula (I) is present as a racemate or in the form of one or more diastereomers or one or more enantiomers;

and wherein the compound corresponding to formula (I) is not selected from the group consisting of

- N,N-dimethyl-[phenyl-(2-pyrrolidin-1-yl-cyclohexyl)-methyl]-amine
- N,N-dimethyl-[(2-morpholin-4-yl-cyclohexyl)-phenyl-methyl]-amine
- 4-[phenyl-(2-pyrrolidin-1-yl-cyclohexyl)-methyl]-pyrrolidine
- 4-[phenyl-(2-pyrrolidin-1-yl-cyclohexyl)-methyl]-morpholine

- 1-[phenyl-(2-pyrrolidin-1-yl-cyclohexyl)-methyl]-piperidine
- 1-[2-methyl-1-(2-pyrrolidin-1-yl-cyclohexyl)-propyl]-piperidine
- N,N-dimethyl-(2-methyl-1,3-diphenyl-3-pyrrolidin-1-yl-propyl)-amine
- N,N-dimethyl-(2-methyl-1,3-diphenyl-3-(N,N-diethylamino)-propyl)-amine
- 4-(1,3-diphenyl-3-pyrrolidin-1-yl-propyl)-morpholine
- N,N-dimethyl-(2-methyl-1-phenyl-3-(morpholin-4-yl)-pentyl)-amine
- benzyl-[2-(dimethylamino-phenyl-methyl)-cyclohexyl]-amine
and
- (2-methyl-1,3-diphenyl-3-piperidin-1-yl-propyl)-propyl-amine.

2. (original) A compound according to claim 1, wherein

R¹ is selected from the group consisting of C₁₋₆-alkyl and aryl,
R² is selected from the group consisting of C₁₋₆-alkyl, aryl, -(C₁₋₆-alkyl)-aryl, and heteroaryl,

where

R¹ and R² are not at the same time aryl or aryl and heteroaryl,

or

R¹ and R² together are -(CH₂)_m- and form a ring in combination with the carbons to which R¹ and R² are connected in formula (I),
where m = 3, 4 or 5;

R³ is selected from the group consisting of H, C₁₋₆-alkyl, aryl, -(C₁₋₆-alkyl)-aryl, heteroaryl, and C(=O)-R⁷,

R⁴ is selected from the group consisting of H, C₁₋₆-alkyl, aryl, -(C₁₋₆-alkyl)-aryl, and heteroaryl,

or

R³ and R⁴ together are -(CH₂)_n- or -(CH₂)₂-X-(CH₂)₂- and form a ring in combination with the nitrogen to which R³ and R⁴ are

connected in formula (I), where $n = 4, 5$ or 6 and where $X = O$ or NR^8 ; and

R^5 and R^6 are independently selected from the group consisting of C_{1-6} -alkyl, aryl, and $(C_{1-6}\text{-alkyl})\text{-aryl}$,

or

R^5 and R^6 together are $-(CH_2)_o$ - or $-(CH_2)_2\text{-}Y\text{-}(CH_2)_2$ - and form a ring in combination with the nitrogen to which R^5 and R^6 are connected in formula (I), where $o = 4, 5$, or 6 and where $Y = O$ or NR^9 ;

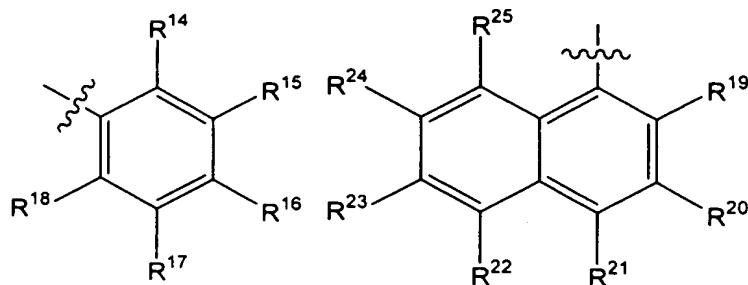
wherein

R^7 is selected from the group consisting of C_{1-6} -alkyl, aryl, $-(C_{1-6}\text{-alkyl})\text{-aryl}$, heteroaryl, and $-(C_{1-6}\text{-alkyl})\text{-heteroaryl}$;

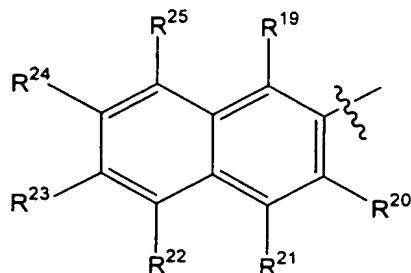
R^8 and R^9 are independently selected from the group consisting of H , C_{1-6} -alkyl, aryl, $-(C_{1-6}\text{-alkyl})\text{-aryl}$, and heteroaryl;

R^{10} is selected from the group consisting of C_{1-6} -alkyl, aryl, and $-(C_{1-6}\text{-alkyl})\text{-aryl}$; and

aryl is a radical selected from the group consisting of



and



where R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} , R^{23} , R^{24} and R^{25} are independently selected from the group consisting of H, C₁₋₆-alkyl, F, Cl, Br, I, CF₃, OR¹¹, OCF₃, SR¹², SO₂CH₃, SO₂CF₃, phenyl, CN, CO₂R¹³, and NO₂; and R¹¹, R¹² and R¹³ are independently selected from the group consisting of H, C₁₋₆-alkyl, phenyl, benzyl, and phenethyl.

3. (original) A compound according to claim 1, wherein

R^1 is selected from the group consisting of methyl, ethyl, n-propyl, 2-propyl, n-butyl, iso-butyl, sec-butyl, tert-butyl, and phenyl,

R^2 is selected from the group consisting of methyl, ethyl, n-propyl, 2-propyl, n-butyl, iso-butyl, sec-butyl, tert-butyl, phenyl, benzyl, phenethyl, and pyridinyl,

where

R^1 and R^2 are not at the same time phenyl or phenyl and pyridinyl,

or

R^1 and R^2 together are $-(CH_2)_m-$ and form a ring in combination with the carbons to which R^1 and R^2 are connected in formula (I), where $m = 3$ or 4 ;

R^3 is selected from the group consisting of H, methyl, ethyl, n-propyl, 2-propyl, n-butyl, iso-butyl, sec-butyl, tert-butyl, phenyl, $-CH_2\text{-aryl}^1$, and $C(=O)\text{-}R^7$,

R^4 is selected from the group consisting of H, methyl, ethyl, n-propyl, 2-propyl, n-butyl, iso-butyl, sec-butyl, tert-butyl, phenyl, and $-CH_2\text{-aryl}^3$,

or

R^3 and R^4 together are $-(CH_2)_n-$ or $-(CH_2)_2\text{-}X\text{-}(CH_2)_2-$ and form a ring in combination with the nitrogen to which R^3 and R^4 are connected in formula (I), where $n = 4$ or 5 and where $X = O$ or NR^8 ;

R^5 and R^6 are independently selected from the group consisting of methyl, ethyl, n-propyl, 2-propyl, and $-CH_2\text{-phenyl}$,

or

R^5 and R^6 together are $-(CH_2)_o-$ or $-(CH_2)_2\text{-}Y\text{-}(CH_2)_2-$ and form a ring in combination with the nitrogen to which R^5 and R^6 are connected in formula (I), where $o = 4$ or 5 and where $Y = O$ or NR^9 ; and

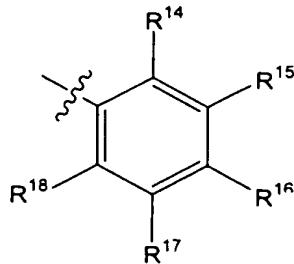
A is selected from the group consisting of aryl 4 , pyridinyl which is optionally substituted one or more times, $C(=O)\text{OR}^{10}$, and 2-propyl;

wherein

R^7 is selected from the group consisting of methyl, ethyl, n-propyl, 2-propyl, n-butyl, iso-butyl, sec-butyl, tert-butyl, and aryl 2 ;

R⁸ and R⁹ are independently selected from the group consisting of H, methyl, and phenyl;

R¹⁰ is selected from the group consisting of methyl, ethyl, n-propyl, 2-propyl, n-butyl, tert-butyl, and benzyl; and aryl¹, aryl², aryl³, and aryl⁴ independently of one another are



wherein 2, 3, 4 or 5 of the radicals R¹⁴, R¹⁵, R¹⁶, R¹⁷, and R¹⁸ are H, and the other radicals of R¹⁴, R¹⁵, R¹⁶, R¹⁷, and R¹⁸ are independently selected from the group consisting of H, C₁₋₆-alkyl, F, Cl, Br, I, CF₃, OR¹¹, OCF₃, SR¹², SO₂CH₃, SO₂CF₃, phenyl, CN, CO₂R¹³, and NO₂, and wherein R¹¹, R¹², and R¹³ are independently selected from the group consisting of H, C₁₋₆-alkyl, phenyl, benzyl, and phenethyl.

4. (original) A compound according to claim 1, wherein

R¹ is methyl or ethyl,

R² is selected from the group consisting of methyl, ethyl and phenyl,

or

R¹ and R² together are -(CH₂)₄- and form a ring in combination with the carbons to which R¹ and R² are connected in formula (I);

R³ is selected from the group consisting of H, n-propyl, -CH₂-phenyl, and C(=O)-R⁷;

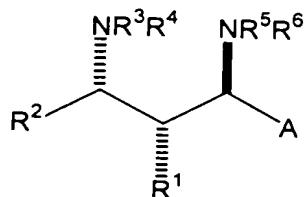
R⁴ is H;

R^5 and R^6 are each methyl or together are $-(CH_2)_2-O-(CH_2)_2-$ and form a ring in combination with the nitrogen to which R^5 and R^6 are connected in formula (I);

A is selected from the group consisting of phenyl, 2-chlorophenyl, 2-methoxyphenyl, 2-nitrophenyl, and pyridin-3-yl; and

R^7 is selected from the group consisting of methyl, phenyl, 2-fluorophenyl, 2-chlorophenyl, and 2-methylphenyl.

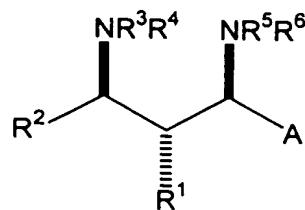
5. (original) A compound according to claim 1, wherein the compound corresponding to formula (I) or a pharmaceutically acceptable salt thereof is present as a diastereomer of the formula (syn,anti-I)



syn,anti-I

6. (original) A compound according to claim 5, wherein the compound corresponding to formula (I) or a pharmaceutically acceptable salt thereof is present in an enantiomerically pure form.

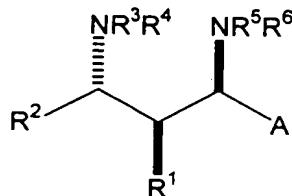
7. (original) A compound according to claim 1, wherein the compound corresponding to formula (I) or a pharmaceutically acceptable salt thereof is present as a diastereomer of the formula (anti,anti-I)



anti,anti-I

8. (original) A compound according to claim 7 wherein the compound corresponding to formula (I) or a pharmaceutically acceptable salt thereof is present in an enantiomerically pure form.

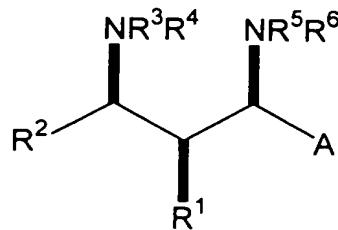
9. (original) A compound according to claim 1 wherein the compound corresponding to formula (I) or a pharmaceutically acceptable salt thereof is present as a diastereomer of the formula (anti,syn-I)



anti,syn-I

10. (original) A compound according to claim 9, wherein the compound corresponding to formula (I) or a pharmaceutically acceptable salt thereof is present in an enantiomerically pure form.

11. (original) A compound according to claim 1 wherein the compound corresponding to formula (I) or a pharmaceutically acceptable salt thereof is present as a diastereomer of the formula (syn,syn-I)



syn,syn-I

12. (original) A compound according to claim 11, wherein the compound corresponding to formula (I) or a pharmaceutically acceptable salt thereof is present in an enantiomerically pure form.

13. (original) A compound according to claim 1, wherein the compound is selected from the group consisting of:

- (syn,syn)-N-[2-(dimethylaminopyridin-3-ylmethyl)cyclohexyl]-benzamide or its hydrochloride
- (syn,syn)-2-(dimethylaminopyridin-3-ylmethyl)cyclohexylamine or its hydrochloride
- (syn,syn)-N-[2-(dimethylaminopyridin-3-ylmethyl)cyclohexyl]-2-fluorobenzamide or its hydrochloride
- (syn,syn)-2-chloro-N-[2-(dimethylaminopyridin-3-ylmethyl)cyclohexyl]-benzamide or its hydrochloride
- (anti,anti)-N-[2-(dimethylaminopyridin-3-ylmethyl)cyclohexyl]-benzamide or its hydrochloride
- (anti,anti)-2-(dimethylaminopyridin-3-ylmethyl)cyclohexylamine or its hydrochloride
- (anti,anti)-N-[2-(dimethylaminopyridin-3-ylmethyl)cyclohexyl]-2-fluorobenzamide or its hydrochloride

- (anti,anti)-2-chloro-N-[2-(dimethylaminopyridin-3-ylmethyl)cyclohexyl]benzamide or its hydrochloride
- (anti,anti)-N-[2-(dimethylaminopyridin-3-ylmethyl)cyclohexyl]-2-methylbenzamide or its hydrochloride
- (syn,syn)-N-[2-(dimethylaminopyridin-3-ylmethyl)cyclohexyl]-2-methylbenzamide or its hydrochloride
- (syn,syn)-N-[2-(dimethylaminopyridin-3-ylmethyl)cyclohexyl]acetamide or its hydrochloride
- (anti,anti)-N-[2-(dimethylaminopyridin-3-ylmethyl)cyclohexyl]acetamide or its hydrochloride
- (syn,syn)-N-[2-(dimethylaminophenylmethyl)cyclohexyl]-2-fluorobenzamide or its hydrochloride
- (syn,syn)-2-(dimethylaminophenylmethyl)cyclohexylamine or its hydrochloride
- (syn,syn)-N-[2-(dimethylamino-phenyl-methyl)-cyclohexyl]-acetamide or its hydrochloride
- (syn,syn)-N-[2-(dimethylamino-phenyl-methyl)-cyclohexyl]-benzamide or its hydrochloride
- (syn,syn)-2-chloro-N-[2-(dimethylamino-phenyl-methyl)-cyclohexyl]-benzamide or its hydrochloride
- (syn,syn)-N-[2-(dimethylamino-phenyl-methyl)-cyclohexyl]-2-methyl-benzamide or its hydrochloride
- (anti,anti)-N-[2-(dimethylamino-phenyl-methyl)-cyclohexyl]-acetamide or its hydrochloride
- (anti,anti)-2-(dimethylamino-phenyl-methyl)-cyclohexylamine or its hydrochloride
- (anti,anti)-N-[2-(dimethylamino-phenyl-methyl)-cyclohexyl]-benzamide or its hydrochloride

Serial No. 10/644,981
Reply Dated October 21, 2005
Reply to Office Action of June 21, 2005

- (anti,anti)-N-[2-(dimethylamino-phenyl-methyl)-cyclohexyl]-2-methyl-benzamide or its hydrochloride
- (syn,syn)-2-chloro-N-{2-[(2-chloro-phenyl)-dimethylamino-methyl]-cyclohexyl}-benzamide or its hydrochloride
- (syn,syn)-2-[(2-chloro-phenyl)-dimethylamino-methyl]-cyclohexylamine or its hydrochloride
- (anti,anti)-2-chloro-N-{2-[(2-chloro-phenyl)-dimethylamino-methyl]-cyclohexyl}-benzamide or its hydrochloride
- (anti,anti)-2-[(2-chloro-phenyl)-dimethylamino-methyl]-cyclohexylamine or its hydrochloride
- (syn,syn)-N-{2-[(2-chloro-phenyl)-dimethylamino-methyl]-cyclohexyl}-2-fluoro-benzamide or its hydrochloride
- (anti,anti)-N-{2-[dimethylamino-(2-nitro-phenyl)-methyl]-cyclohexyl}-benzamide or its hydrochloride
- (anti,anti)-2-[dimethylamino-(2-nitro-phenyl)-methyl]-cyclohexylamine or its hydrochloride
- (anti,anti)-N-{2-[dimethylamino-(2-nitro-phenyl)-methyl]-cyclohexyl}-2-fluoro-benzamide or its hydrochloride
- (anti,anti)-2-chloro-N-{2-[dimethylamino-(2-nitro-phenyl)-methyl]-cyclohexyl}-benzamide or its hydrochloride
- (anti,anti)-N-{2-[dimethylamino-(2-nitro-phenyl)-methyl]-cyclohexyl}-2-methyl-benzamide or its hydrochloride
- (syn,syn)-N-{2-[dimethylamino-(2-nitro-phenyl)-methyl]-cyclohexyl}-acetamide or its hydrochloride
- (syn,syn)-N-2-[dimethylamino-(2-nitro-phenyl)-methyl]-cyclohexylamine or its hydrochloride
- (anti,anti)-N-{2-[(2-chloro-phenyl)-dimethylamino-methyl]-cyclohexyl}-acetamide or its hydrochloride
- (syn,anti)-2-(dimethylamino-phenyl-methyl)-cyclohexylamine

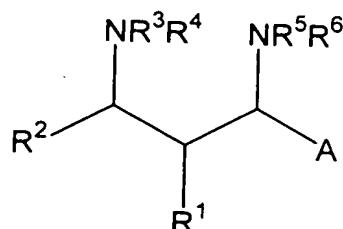
- (syn,anti)-N-[2-(dimethylamino-phenyl-methyl)-cyclohexyl]-benzamide
- (anti,anti)-N-{2-[dimethylamino-(2-methoxy-phenyl)-methyl]-cyclohexyl}-benzamide
- (anti,anti)-N-{2-[dimethylamino-(2-nitro-phenyl)-methyl]-cyclohexyl}-benzamide
- (anti,anti)-N-{2-[(2-chloro-phenyl)-dimethylamino-methyl]-cyclohexyl}-benzamide
- (anti,anti)-N-{2-[dimethylamino-(2-methoxy-phenyl)-methyl]-cyclohexyl}-acetamide
- (anti,anti)-2-[dimethylamino-(2-methoxy-phenyl)-methyl]-cyclohexylamine
- (anti,anti)-N-{2-[(2-chloro-phenyl)-dimethylamino-methyl]-cyclohexyl}-acetamide
- (anti,anti)-2-[(2-chloro-phenyl)-dimethylamino-methyl]-cyclohexylamine
- (anti,anti)-N-{2-[dimethylamino-(2-nitro-phenyl)-methyl]-cyclohexyl}-acetamide
- (anti,anti)-2-[dimethylamino-(2-nitro-phenyl)-methyl]-cyclohexylamine
- (syn,syn)-2-(dimethylamino-phenyl-methyl)-cyclohexylamine
- (syn,syn)-2-[(2-chloro-phenyl)-dimethylamino-methyl]-cyclohexylamine
- (anti,anti)-2-chloro-N-(3-dimethylamino-1-ethyl-2-methyl-3-phenyl-propyl)-benzamide
- (anti,anti)-3-dimethylamino-1-ethyl-2-methyl-3-phenyl-propylamine
- (syn,anti)-2-(dimethylamino-phenyl-methyl)-cyclohexyl-N-(n-propyl)-amine

- (syn,anti)-2-(morpholin-4-yl-phenyl-methyl)-cyclohexyl-N-(n-propyl)-amine
- (syn,anti)-2,N,N-trimethyl-1,3-diphenyl-N'-propyl-propane-1,3-diamine
- (syn,anti)-2-(dimethylamino-phenyl-methyl)-cyclohexyl-N-benzylamine
- (syn,anti)-2-(morpholin-4-yl-phenyl-methyl)-cyclohexyl-N-benzylamine
- (syn,anti)-2,N,N-trimethyl-1,3-diphenyl-N'-benzyl-propane-1,3-diamine
- (syn,anti)-2-(dimethylamino-phenyl-methyl)-cyclohexylamine
- (syn,anti)-2-(morpholin-4-yl-phenyl-methyl)-cyclohexylamine
- (syn,anti)-2,N,N-trimethyl-1,3-diphenyl-propane-1,3-diamine
- (syn,anti)-2-[(2-chlorophenyl)-dimethylamino-methyl]-cyclohexylamine
- (anti,anti)-2-[(2-chlorophenyl)-dimethylamino-methyl]-cyclohexylamine
- (syn,syn)-2-(dimethylamino-phenyl-methyl)-cyclohexylamine
- (anti,anti)-2-(dimethylamino-phenyl-methyl)-cyclohexylamine
- (syn,syn)-2-[(2-chlorophenyl)-dimethylamino-methyl]-cyclohexylamine
- (syn,syn)-2-(dimethylamino-pyridin-3-yl-methyl)-cyclohexylamine
- (anti,anti)-2-(dimethylamino-pyridin-3-yl-methyl)-cyclohexylamine
- (syn,syn)-2-(dimethylamino-(2-methoxyphenyl)-methyl)-cyclohexylamine
- (anti,anti)-2-(dimethylamino-(2-methoxyphenyl)-methyl)-cyclohexylamine
- (syn,syn)-2-(dimethylamino-(2-nitrophenyl)-methyl)-cyclohexylamine

and

- (anti,anti)-2-(dimethylamino-(2-nitrophenyl)-methyl)-cyclohexylamine.

14. (currently amended) A method for preparing a compound according to claim 1 corresponding to formula (I)



I

or a pharmaceutically acceptable salt thereof,

wherein

R¹ is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, and aryl,

R² is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, and -(C₁₋₆-alkyl)-heterocyclyl,

where

R¹ and R² are not at the same time aryl or aryl and heterocyclyl,

or

R¹ and R² together are -(CH₂)_m- and form a ring in combination with the carbons to which R¹ and R² are connected in formula (I), where m = 2, 3, 4, 5 or 6, wherein the -(CH₂)_m- ring is optionally substituted one or more times by C₁₋₆-alkyl, aryl, O-C₁₋₆-alkyl, O-(C₁₋₆-alkyl)-aryl, or benzo-fused;

R³ is selected from the group consisting of H, C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, and -(C₁₋₆-alkyl)- heterocyclyl,

R⁴ is H;

R⁵ and R⁶ are independently selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, and (C₁₋₆-alkyl)-aryl,

or

R⁵ and R⁶ together are -(CH₂)_o- or -(CH₂)₂-Y-(CH₂)₂- and form a ring in combination with the nitrogen to which R⁵ and R⁶ are connected in formula (I), where o = 3, 4, 5, 6 or 7, where Y = O, S or NR⁹, and wherein -(CH₂)_o- or -(CH₂)₂-Y-(CH₂)₂- is unsubstituted or substituted by C₁₋₆-alkyl; and

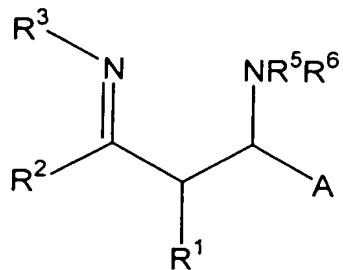
A is selected from the group consisting of aryl, heteroaryl, C(=O)OR¹⁰, and 2-propyl;

wherein

R⁹ is selected from the group consisting of H, C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, and heterocyclyl;

R¹⁰ is selected from the group consisting of C₁₋₆-alkyl, aryl, and -(C₁₋₆-alkyl)-aryl;

wherein the method comprises reacting an imine corresponding to formula (II) wherein R¹, R², R³, R⁵, R⁶, and A have the meanings given above

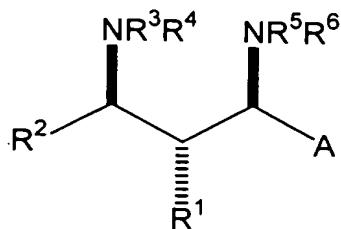


II

with a reducing agent.

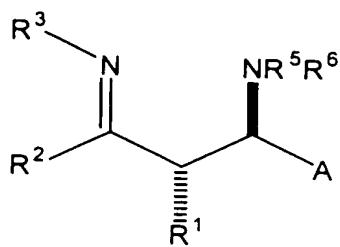
15. (original) The method of claim 14, wherein the reducing agent is a complex hydride.

16. (original) The method of claim 14, wherein the method comprises diastereoselective preparation of a compound corresponding to formula (anti,anti-I)



anti,anti-I

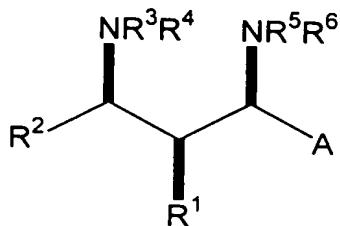
or a pharmaceutically acceptable salt thereof,
wherein said imine of formula (II) is an imine of formula (anti-II)



anti-II

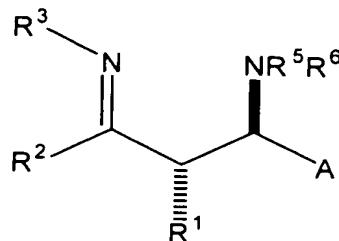
and the reducing is carried out in an alcoholic solvent.

17. (original) The method of claim 16, wherein the reducing agent is selected from the group consisting of zinc cyanoborohydride (ZnCNBH_3), LiBH_4 , NaBH_4 , NaBH_3CN and $\text{NaBH}(\text{OC}(=\text{O})\text{CH}_3)_3$.
18. (original) The method of claim 16, wherein the alcoholic solvent is methanol, and wherein reducing is carried out with warming from 0°C to room temperature over 8 to 24 hours.
19. (original) The method of claim 18, wherein the reducing is carried out with warming from 0°C to room temperature over 10 to 14 hours.
20. (original) The method of claim 14, wherein the method comprises diastereoselective preparation of a compound corresponding to structure (syn,syn-I)



syn,syn-I

or a pharmaceutically acceptable salt thereof,
wherein said imine corresponding to formula (II) is an imine
corresponding to formula (anti-II)



anti-II

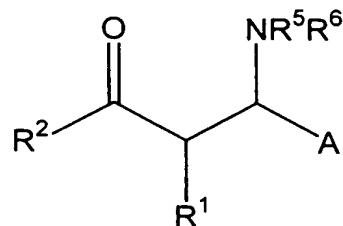
and the reducing is carried out in an ethereal solvent.

21. (original) The method of claim 20, wherein the reducing agent is L-Selectride or diisobutylaluminum hydride.

22. (original) The method of claim 20, wherein the ethereal solvent is tetrahydrofuran, and wherein the reducing is carried out with warming from 0°C to room temperature over 8 to 24 hours.

23. (original) The method of claim 22, wherein the reducing is carried out with warming from 0°C to room temperature over 10 to 14 hours.

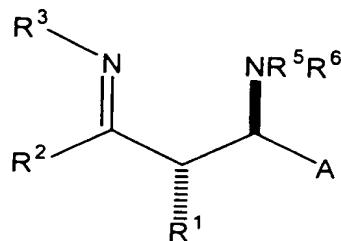
24. (original) The process of claim 14, further comprising preparing the imine corresponding to formula (II) by reacting a Mannich base (III)



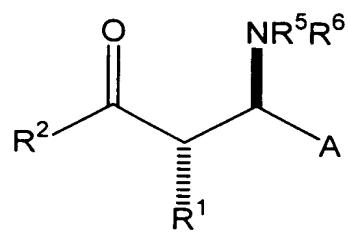
III

with ammonium acetate when R³ in structure (II) is H, or with an amine of the formula R³NH₂ when R³ is not H, in an ethereal or alcoholic solvent.

25. (original) The process of claim 24, wherein said imine corresponding to formula (II) is an imine corresponding to formula (anti-II) and said Mannich base (III) is a Mannich base corresponding to formula (anti-III)

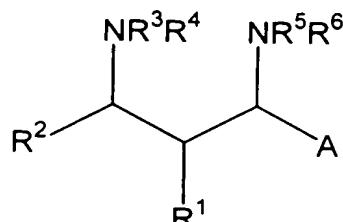


anti-II



anti-III

26. (original) A method for preparing a compound corresponding to formula (I)



I

or a pharmaceutically acceptable salt thereof,

wherein

R¹ is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, and aryl,
R² is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, and -(C₁₋₆-alkyl)-heterocyclyl,

where

R¹ and R² are not at the same time aryl or aryl and heterocyclyl,
or
R¹ and R² together are -(CH₂)_m- and form a ring in combination with the carbons to which R¹ and R² are connected in formula (I),
where m = 2, 3, 4, 5 or 6, wherein the -(CH₂)_m- ring is optionally substituted one or more times by C₁₋₆-alkyl, aryl, O-C₁₋₆-alkyl, O-(C₁₋₆-alkyl)-aryl, or benzo-fused;
R³ and R⁴ are H;
R⁵ and R⁶ are independently selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, and (C₁₋₆-alkyl)-aryl,
or
R⁵ and R⁶ together are -(CH₂)_o- or -(CH₂)₂-Y-(CH₂)₂- and form a ring in combination with the nitrogen to which R⁵ and R⁶ are connected in formula (I), where o = 3, 4, 5, 6 or 7, where Y = O, S or NR⁹, and wherein -(CH₂)_o- or -(CH₂)₂-Y-(CH₂)₂- is unsubstituted or substituted by C₁₋₆-alkyl; and
A is selected from the group consisting of aryl, heteroaryl, C(=O)OR¹⁰, or 2-propyl;

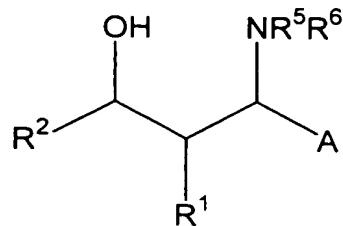
wherein

R^9 is selected from the group consisting of H, C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, and heterocyclyl;

R^{10} is selected from the group consisting of C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, and -(C₁₋₆-alkyl)-aryl;

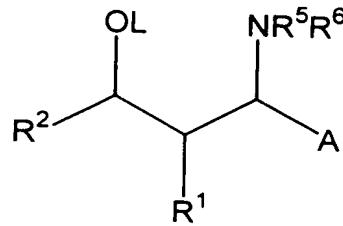
wherein the method comprises:

(a) converting an amino-alcohol corresponding to formula (IV)



IV

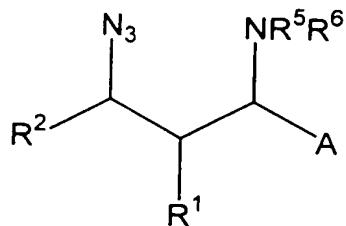
wherein R¹, R², R⁵, R⁶, and A have the meanings given above, into a compound corresponding to formula (V)



V

wherein wherein R¹, R², R⁵, R⁶, and A have the meanings given above and L is mesyl or tosyl;

(b) converting the compound corresponding to formula (V) into an azide corresponding to formula (VI)

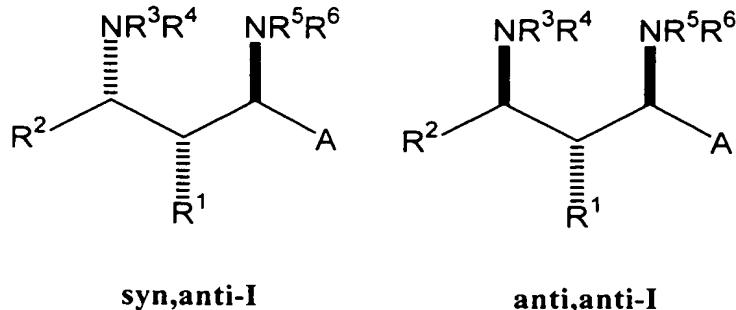


VI

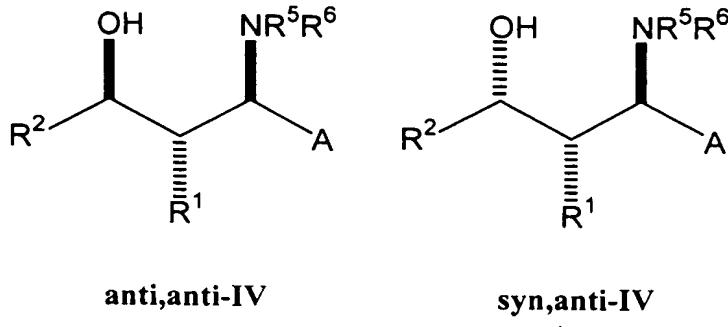
wherein R¹, R², R⁵, R⁶, and A have the meanings given above,
and

(c) reducing the azide corresponding to formula (VI) to a diamine
corresponding to formula (I).

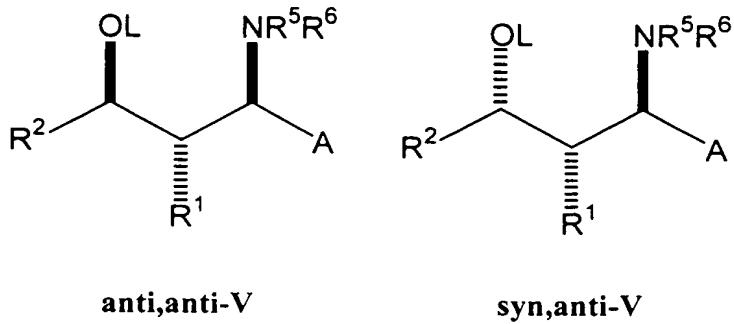
27. The method of claim 26, wherein converting the amino-alcohol corresponding to formula (IV) into a compound corresponding to formula (V) comprises reacting the compound corresponding to formula (IV) with mesyl chloride or tosyl chloride in the presence of a base. (original)
28. The method of claim 26, wherein converting the compound corresponding to formula (V) to an azide corresponding to formula (VI) comprises reacting the compound corresponding to formula (V) with sodium azide.
29. (original) The method of claim 26, wherein preparing the compound corresponding to formula (I) comprises diastereoselective preparation of a compound corresponding to formula (syn,anti-I) or (anti,anti-I)



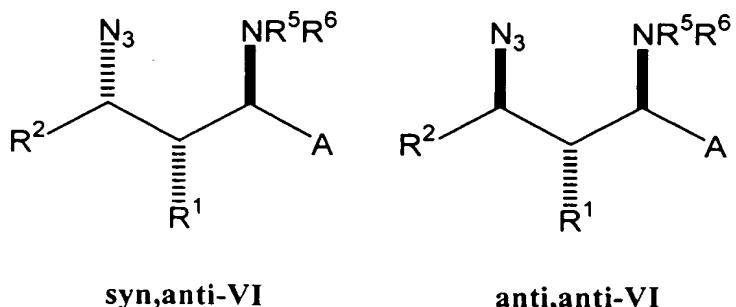
or a pharmaceutically acceptable salt thereof;
wherein the amino-alcohol corresponding to formula (IV) is an amino-alcohol corresponding to formula (anti,anti-IV) or (syn,anti-IV)



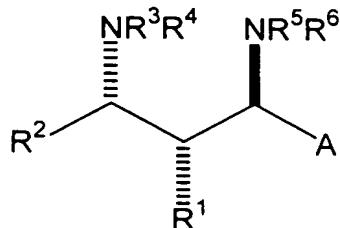
the compound corresponding to formula (V) is a compound corresponding to formula (anti,anti-V) or (syn,anti-V)



wherein L denotes mesyl or tosyl;
and the azide corresponding to formula (VI) is an azide corresponding to formula (syn,anti-VI) or (anti,anti-VI)



30. (original) A method for preparing a compound according to claim 5
corresponding to formula (syn,anti-I)



syn,anti-I

or a pharmaceutically acceptable salt thereof,
wherein

R¹ is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, and aryl,

R² is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, and -(C₁₋₆-alkyl)-heterocyclyl,

where

R¹ and R² are not at the same time aryl or aryl and heterocyclyl,
or

R¹ and R² together are -(CH₂)_m- and form a ring in combination with the carbons to which R¹ and R² are connected in formula (I),
where m = 2, 3, 4, 5 or 6, wherein the -(CH₂)_m- ring is unsubstituted or monosubstituted or polysubstituted by C₁₋₆-alkyl, aryl, O-C₁₋₆-alkyl, O-(C₁₋₆-alkyl)-aryl, or benzo-fused;

R³ is selected from the group consisting of H, C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl and -(C₁₋₆-alkyl)- heterocyclyl;

R⁴ is H;

R⁵ and R⁶ are independently selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, and (C₁₋₆-alkyl)-aryl,

or

R⁵ and R⁶ together are -(CH₂)_o- or -(CH₂)₂-Y-(CH₂)₂- and form a ring in combination with the nitrogen to which R⁵ and R⁶ are connected in formula (I), where o = 3, 4, 5, 6 or 7, where Y = O, S or NR⁹, and wherein -(CH₂)_o- or -(CH₂)₂-Y-(CH₂)₂- is unsubstituted or substituted by C₁₋₆-alkyl; and

A is selected from the group consisting of aryl, heteroaryl, C(=O)OR¹⁰, and 2-propyl;

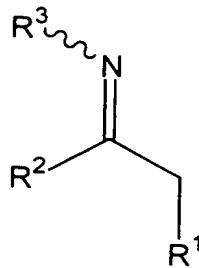
wherein

R⁹ is selected from the group consisting of H, C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, and heterocyclyl;

R¹⁰ is selected from the group consisting of C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, and -(C₁₋₆-alkyl)-aryl;

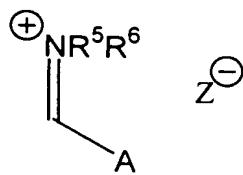
wherein the method comprises

(aa) reacting an imine corresponding to structure (VII)



VII

wherein R¹, R², and R³ have the meanings given above, with an iminium salt corresponding to structure (VIII)



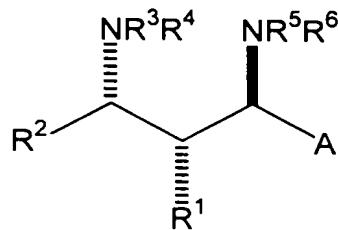
VIII

wherein R¹, R², R⁵, R⁶, and A have the meanings given above and Z⁻ is a suitable counter-ion to obtain an addition product;

and

(bb) reducing the addition product from (aa) to obtain the compound corresponding to formula (syn, anti-I).

31. (original) The method of claim 30, wherein the method comprises preparing a compound corresponding to formula (syn,anti-I)

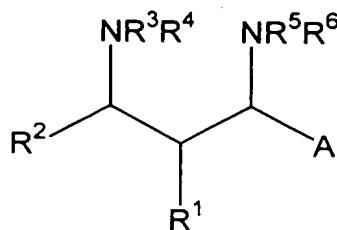


syn,anti-I

wherein R¹, R², R⁴, R⁵, R⁶, and A are as defined in claim 30 and R³ is H, and wherein the process further comprises:

(cc) reacting a compound corresponding to formula (syn,anti-I), wherein R³ is -(CH₂)-phenyl and where phenyl is unsubstituted or substituted by C₁₋₆-alkyl, with hydrogen (H₂) in the presence of a transition metal selected from the group consisting of platinum, palladium, and nickel.

32. (original) A process for preparing a compound corresponding to formula (I)



I

or a pharmaceutically acceptable salt thereof,

wherein

R¹ is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, and aryl,

R² is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, and -(C₁₋₆-alkyl)-heterocyclyl,

where

R¹ and R² are not at the same time aryl or aryl and heterocyclyl,

or

R¹ and R² together are -(CH₂)_m- and form a ring in combination with the carbons to which R¹ and R² are connected in formula (I), where m = 2, 3, 4, 5 or 6, wherein the -(CH₂)_m- ring is unsubstituted or monosubstituted or polysubstituted by C₁₋₆-alkyl, aryl, O-C₁₋₆-alkyl, O-(C₁₋₆-alkyl)-aryl, or benzo-fused;

R³ is C(=O)-R⁷;

R⁴ is selected from the group consisting of H, C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, aryl-(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, and -(C₁₋₆-alkyl)-heterocyclyl;

R⁵ and R⁶ are independently selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, and (C₁₋₆-alkyl)-aryl,

or

R^5 and R^6 together are $-(CH_2)_o-$ or $-(CH_2)_2-Y-(CH_2)_2-$ and form a ring in combination with the nitrogen to which R^5 and R^6 are connected in formula (I), where $o = 3, 4, 5, 6$ or 7 , where $Y = O, S$ or NR^9 , and wherein $-(CH_2)_o-$ or $-(CH_2)_2-Y-(CH_2)_2-$ is unsubstituted or substituted by C_{1-6} -alkyl; and

A is selected from the group consisting of aryl, heteroaryl, $C(=O)OR^{10}$, and 2-propyl;

wherein

R^7 is selected from the group consisting of C_{1-6} -alkyl, C_{3-8} -cycloalkyl, $-(C_{1-6}$ -alkyl)- C_{3-8} -cycloalkyl, aryl, $-(C_{1-6}$ -alkyl)-aryl, heterocyclyl, and $-(C_{1-6}$ -alkyl)-heterocyclyl;

R^9 is selected from the group consisting of H, C_{1-6} -alkyl, C_{3-8} -cycloalkyl, $-(C_{1-6}$ -alkyl)- C_{3-8} -cycloalkyl, aryl, $-(C_{1-6}$ -alkyl)-aryl and heterocyclyl; and

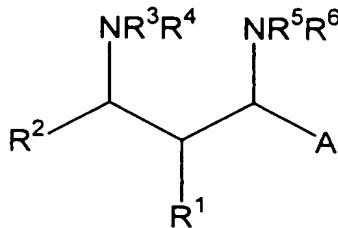
R^{10} is selected from the group consisting of C_{1-6} -alkyl, C_{3-8} -cycloalkyl, $-(C_{1-6}$ -alkyl)- C_{3-8} -cycloalkyl, aryl and $-(C_{1-6}$ -alkyl)-aryl;

wherein the prepared compound is present as a racemate or in the form of one or more diastereomers or one or more enantiomers, wherein the method comprises

reacting a compound corresponding to formula (I), wherein R^3 is H and R^1, R^2, R^4, R^5 , and R^6 are as defined above, with an acylating reagent.

33. (original) The process of claim 32, wherein the acylating reagent is an acid chloride of the formula $R^7-C(=O)-Cl$, wherein R^7 is selected from the group consisting of C_{1-6} -alkyl, aryl, $-(C_{1-6}$ -alkyl)-aryl, heterocyclyl, and $-(C_{1-6}$ -alkyl)-heterocyclyl.

34. (original) A pharmaceutical composition comprising a compound corresponding to formula (I)



I

or a pharmaceutically acceptable salt thereof, which is present as a racemate or in the form of one or more diastereomers or one or more enantiomers, and a pharmaceutically acceptable carrier or adjuvant,

wherein in formula (I)

R¹ is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, and aryl,

R² is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, and -(C₁₋₆-alkyl)-heterocyclyl,

where

R¹ and R² are not at the same time aryl or aryl and heterocyclyl,

or

R¹ and R² together are -(CH₂)_m- and form a ring in combination with the carbons to which R¹ and R² are connected in formula (I), where m = 2, 3, 4, 5 or 6, wherein the -(CH₂)_m- ring is optionally substituted one or more times by C₁₋₆-alkyl, aryl, O-C₁₋₆-alkyl, O-(C₁₋₆-alkyl)-aryl, or benzo-fused;

R³ is selected from the group consisting of H, C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, -(C₁₋₆-alkyl)- heterocyclyl, and C(=O)-R⁷,

R^4 is selected from the group consisting of H, C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl and -(C₁₋₆-alkyl)-heterocyclyl,

or

R^3 and R^4 together are -(CH₂)_n- or are -(CH₂)₂-X-(CH₂)₂- and form a ring in combination with the nitrogen to which R^3 and R^4 are connected in formula (I), where n = 3, 4, 5, 6 or 7, where X = O, S or NR⁸, and wherein -(CH₂)_n- or -(CH₂)₂-X-(CH₂)₂- is unsubstituted or substituted by C₁₋₆-alkyl;

R^5 and R^6 are independently selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, and (C₁₋₆-alkyl)-aryl,

or

R^5 and R^6 together are -(CH₂)_o- or -(CH₂)₂-Y-(CH₂)₂- and form a ring in combination with the nitrogen to which R^5 and R^6 are connected in formula (I), where o = 3, 4, 5, 6 or 7, where Y = O, S or NR⁹, and wherein -(CH₂)_o- or -(CH₂)₂-Y-(CH₂)₂- is unsubstituted or substituted by C₁₋₆-alkyl; and

A is selected from the group consisting of aryl, heteroaryl, C(=O)OR¹⁰, and 2-propyl;

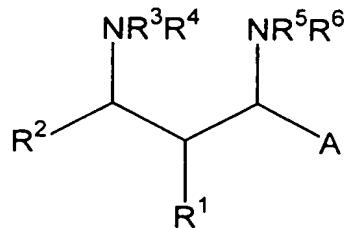
wherein

R^7 is selected from the group consisting of C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, and -(C₁₋₆-alkyl)-heterocyclyl;

R^8 and R^9 are independently selected from the group consisting of H, C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, and heterocyclyl; and

R¹⁰ is selected from the group consisting of C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, and -(C₁₋₆-alkyl)-aryl.

35. (currently amended) A method for inhibiting pain in a mammal comprising administering an effective amount of a compound corresponding to formula (I)



I

or a pharmaceutically acceptable salt thereof, which is present as a racemate or in the form of one or more diastereomers or one or more enantiomers,

wherein

R¹ is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, and aryl,

R² is selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, and -(C₁₋₆-alkyl)-heterocyclyl,

where

R¹ and R² are not at the same time aryl or aryl and heterocyclyl,

or

R¹ and R² together are -(CH₂)_m- and form a ring in combination with the carbons to which R¹ and R² are connected in formula (I), where m = 2, 3, 4, 5 or 6, wherein the -(CH₂)_m- ring is

unsubstituted or monosubstituted or polysubstituted by C₁₋₆-alkyl, aryl, O-C₁₋₆-alkyl, O-(C₁₋₆-alkyl)-aryl, or benzo-fused;

R³ is selected from the group consisting of H, C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl, -(C₁₋₆-alkyl)-heterocyclyl, and C(=O)-R⁷,

R⁴ is selected from the group consisting of H, C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl and -(C₁₋₆-alkyl)-heterocyclyl,

or

R³ and R⁴ together are -(CH₂)_n- or -(CH₂)₂-X-(CH₂)₂- and form a ring in combination with the nitrogen to which R³ and R⁴ are connected in formula (I), where n = 3, 4, 5, 6 or 7, where X = O, S or NR⁸, and wherein -(CH₂)_n- or -(CH₂)₂-X-(CH₂)₂- is unsubstituted or substituted by C₁₋₆-alkyl;

R⁵ and R⁶ are independently selected from the group consisting of C₁₋₁₂-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, and (C₁₋₆-alkyl)-aryl,

or

R⁵ and R⁶ together are -(CH₂)_o- or -(CH₂)₂-Y-(CH₂)₂- and form a ring in combination with the nitrogen to which R⁵ and R⁶ are connected in formula (I), where o = 3, 4, 5, 6 or 7, where Y = O, S or NR⁹, and wherein -(CH₂)_o- or -(CH₂)₂-Y-(CH₂)₂- is unsubstituted or substituted by C₁₋₆-alkyl; and

A is selected from the group consisting of aryl, heteroaryl, C(=O)OR¹⁰, and 2-propyl;

wherein

R⁷ is selected from the group consisting of C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, heterocyclyl and -(C₁₋₆-alkyl)-heterocyclyl;

R⁸ and R⁹ are independently selected from the group consisting of H, C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, -(C₁₋₆-alkyl)-aryl, and heterocyclyl; and

R¹⁰ is selected from the group consisting of C₁₋₆-alkyl, C₃₋₈-cycloalkyl, -(C₁₋₆-alkyl)-C₃₋₈-cycloalkyl, aryl, and -(C₁₋₆-alkyl)-aryl.

36. (canceled)